

REMARKS

This responds to the Office Action mailed on November 25, 2005.

Claims 1, 7 and 8 are amended, claims 2 and 6 are canceled; as a result, claims 1, 3-5, 7, 8, and 17-26 are now pending in this application.

§101 Rejection of the Claims

Claims 1, 2 and 7 were rejected under 35 USC § 101 as claiming the same invention as that of claims 1 and 7, respectively, of prior U.S. Patent No. 6,703,299.

Applicant has amended claim 1 to include all the limitations of claims 2 and 6. Claim 6 was objected to as otherwise allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. These amendments of claim 1 therefore obviate the rejection and withdrawal of the rejection is respectfully requested.

Double Patenting Rejection

Claims 3, 4, 5 and 8 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 2, 5 and 8, respectively, of U.S. Patent No. 6,703,299.

Applicant has amended claim 1 to include all the limitations of claims 2 and 6. Claim 6 was objected to as otherwise allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. These amendments of claim 1 therefore obviate the rejection and also the need to file a Terminal Disclaimer in compliance with 37 CFR 1.321(b). Withdrawal of the rejection is respectfully requested.

§112 Rejection of the Claims

Claim 17 was rejected under 35 USC § 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. Applicant respectfully traverses the rejection and requests the Office to consider the following.

The Office states that the

relationship [between ‘an interstitial film’ and a pattern that is possibly transferred to the fillet portion] is not cited in the claim. This omission has resulted in *a gap between necessary structural connections*. Furthermore, it appears that the surface roughness and pattern could be characteristic of any arbitrary interstitial film surface *since the claim is nebulous with respect to the composition/structure of ‘an interstitial film.’*

(Office Action at page 4. Emphases added). Applicant respectfully disagrees and will explain.

Firstly, “necessary structural connections” as quoted has to do with “structural cooperative relationships of elements”. (M.P.E.P. § 2172.01). Claim 17 teaches

a cured underfill material including a fillet portion
... wherein the fillet portion includes a surface
roughness and pattern

(Claim 17). There is no failure of claim 17 to teach “structural cooperative relationships of elements” between the fillet portion and a surface roughness and pattern. FIG. 3C illustrates the structural cooperative relationships between the fillet portion 134 and the location of the surface roughness 138. Withdrawal of the rejection is respectfully requested.

(Id).

Secondly, the alleged nebulosity “with respect to the composition/structure of ‘an interstitial film’ ” (Office Action at pages 3 and 4), Applicant respectfully asserts that the relationship of the interstitial film and the surface roughness need only be claimed in the claim. It is more properly the office of the Detailed Description and Figures to teach how or what. Applicant directs the Office to the disclosure at pages 8 and 9:

It is noted that the cured underfill material 124 includes the fillet portion 134 and the interstitial portion 136 that is between the die 112 and the mounting substrate 120. It is further noted that *the fillet portion 134 includes a surface roughness 138 and pattern that is characteristic of the surface roughness and pattern that was impressed into the fillet portion 134 by the tacky film 130.*

(Specification at page 8. Emphasis added). By this teaching, Applicant respectfully asserts that there is a “relationship between ‘and interstitial film’ and a pattern that is possibly transferred to the fillet portion”. (Quoting Office Action at page 5). Because this teaching is more properly in the body of the disclosure and not in the claims, withdrawal of the rejection is respectfully requested.

Regarding the rejection of claim 26 for antecedent basis issues, claim 26 was amended to delete the phrase “the fillet,”. This amendment obviates the antecedent-basis issue. Withdrawal of the rejection is respectfully requested.

Allowable Subject Matter

Claims 6 and 18-22 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 6 was canceled and added to independent claim 1.

Claims 18-22 only had the impediment that claim 17 was rejected under 35 USC ¶ 2 for failing to claim properly. Applicant has traversed and addressed this rejection. Withdrawal of the rejections is respectfully requested.

Objections to the Claims

Claims 7 and 8 were objected to due to informalities.

By amendment of claim 1 with the limitation of claim 2, these objections, for antecedent-basis issues, are obviated. Withdrawal of the objections is respectfully requested.

§102 Rejection of the Claims

Claims 1 and 2 were rejected under 35 USC § 102(e) as being anticipated by Baba et al. (U.S. 2001/0040298).

Claim 1 was amended, which amendment has obviated the grounds for rejection of claims 1 and 2 as being anticipated by Baba et al. Withdrawal of the rejections is respectfully requested.

§103 Rejection of the Claims

Claims 23-25 were rejected under 35 USC § 103(a) as being unpatentable over Kirkpatrick (U.S. 5,998,242) in view of Wang et al. (U.S. 6,000,924), and further in view of Baba et al. Applicant respectfully traverses the rejection and requests the Office to consider the following.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (M.P.E.P. § 2143 8th Ed, Rev.1).

The Office Action admits that “the difference between Kirkpatrick and the instant invention is ‘a tacky film that is disposed over the die and stretched onto the mounting substrate’ and ‘a mold press that gives shape to the film.’” (Office Action at page 6). The technology of Kirkpatrick, however, is radically different from that of Baba. The relationship between Baba and Kirkpatrick can only be reached by using Applicant's disclosure as a guide. Kirkpatrick has to do with pre-applied underfill material that is softened. Claim 23 requires “an underfill material disposed between the die and the mounting substrate; and an underfill inlet and outlet system that communicates through the film”. This limitation is technologically repugnant to Baba's disclosure, and the combination with Kirkpatrick would render Baba inoperative, as would the combination also render Kirkpatrick inoperative.

The Office next looks to Wang to fill the void admitted in Kirkpatrick. But neither teaches “a tacky film disposed over and stretched over the mounting substrate”. (Claim 23).

Further, not even Kirkpatrick teaches this limitation. Because all the claim limitations are not taught in the cited references withdrawal of the rejection is respectfully requested.

Applicant notes that claims 24-26 depend from claim 23 and are also allowable over the cited references. Withdrawal of the rejection is respectfully requested.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney, John Greaves at (801) 278-9171, or Applicant's below-named representative to facilitate the prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

SONG-HUA SHI ET AL.

By their Representatives,
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
Attorneys for Intel Corporation
P.O. Box 2938
Minneapolis, Minnesota 55402
(612) 349-9592

Date Jan. 25, 2006

By Ann M. McCrackin
Ann M. McCrackin
Reg. No. 42,858

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 25th day of January 2006.

Amy Moriarty

Name

Signature

